

Application No. 10/023,992
Amendment dated June 14, 2005
Reply to Office Action dated March 14, 2005

AMENDMENTS TO THE CLAIMS:

This listing of the claims will replace all prior versions, and listings, of claims in the application.

1. (Original) A system for enabling a node, adapted for use in a wireless communications network, to detect a data signal in a received signal containing noise, said system comprising:

a first correlation circuit, adapted to correlate said received signal with a first reference sequence, and output an intermediate correlated signal;

a second correlation circuit, adapted to correlate said intermediate correlated signal with a second reference sequence, and output a correlated signal;

a threshold generating circuit, adapted to generate a threshold value based on an estimation of the variance of said intermediate correlated signal over time; and

a comparison circuit, adapted to compare said correlated signal to said threshold value to determine whether said received signal includes said data signal.

2. (Original) A system as claimed in claim 1, wherein:

said threshold generating circuit includes a variance estimation circuit, adapted to average said intermediate correlated signal over a period of time and output an estimate of the variance signal; and

a scaling circuit, adapted to mathematically combine said estimate of the variance signal with a constant to output said threshold value.

3. (Original) A system as claimed in claim 2, wherein:

said scaling circuit multiplies said estimate of the variance signal with said constant to output said threshold value.

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4. (Original) A system as claimed in claim 1, wherein:

said comparison circuit outputs a detection signal indicating detection of said data signal in said received signal when a level of said correlated signal is at least equal to said threshold value; and

said comparison circuit outputs a non-detection signal indicating non-detection of said data signal in said received signal when a level of said correlated signal is less than said threshold value.

5. (Currently Amended) A method for enabling a node, adapted for use in a wireless communications network, to detect a data signal in a received signal containing noise, said method comprising:

performing a first correlation ~~circuit~~ operation to correlate said received signal with a first reference sequence, and output an intermediate correlated signal;

performing a second correlation ~~circuit~~ operation to correlate said intermediate correlated signal with a second reference sequence, and output a correlated signal;

~~a threshold generating circuit, adapted to generate a~~ threshold value based on an estimate of the variance of said intermediate correlated signal over time; and

comparing said correlated signal to said threshold value to determine whether said received signal includes said data signal.

6. (Currently Amended) A method as claimed in claim 6 5, wherein said threshold generating includes:

estimating the variance of said intermediate correlated signal over a period of time and output an estimate of the variance signal; and

mathematically combining said estimate of the variance signal with a constant to output said threshold value.

7. (Currently Amended) A method as claimed in claim 7 6, wherein:

said mathematically combining multiples said estimate of the variance signal with said

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constant to output said threshold value.

8. (Currently Amended) A method as claimed in claim 6 5, wherein:
said comparing outputs a detection signal indicating detection of said data signal in said received signal when a level of said correlated signal is at least equal to said threshold value; and
said comparing outputs a non-detection signal indicating non-detection of said data signal in said received signal when a level of said correlated signal is less than said threshold value.

9. (New) The system as claimed in claim 1, wherein the wireless communication network includes an ad-hoc wireless communication network in which the node is operating, and the first correlation circuit, second correlation circuit, threshold generating circuit and comparison circuit are present at the node.

10. (New) A method as claimed in claim 5, wherein the wireless communications network includes an ad-hoc communication network in which the node is operating, and the first correlation operation, second correlation operation, generating and comparing are performed by the node.